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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,376	01/16/2002	Uwe Joerg Ries	5/1312	6171
28505	7590	05/19/2004	EXAMINER	
BOEHRINGER INGELHEIM CORPORATION			ANDERSON, REBECCA L	
900 RIDGEBURY ROAD			ART UNIT	
P. O. BOX 368			PAPER NUMBER	
RIDGEFIELD, CT 06877			1626	

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/050,376	Applicant(s) RIES ET AL.	
	Examiner Rebecca L Anderson	Art Unit 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-9 is/are pending in the application.
4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-8 is/are rejected.
- 7) ☒ Claim(s) 1-4 and 6-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-4 and 6-9 are currently pending in the instant application. Claims 1-4 and 6-8 are rejected and objected and claim 9 is withdrawn from consideration as being drawn to non-elected inventions.

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-8 and the species of compound 4 in the paper mailed July 2, 2003 is acknowledged. The traversal, in the paper filed 25 February 2004 is on the ground(s) that the generic concept should be broadened to the concept in the amended claims since groups such as thienyl, thiazolyl, pyrimidyl, etc. are all monocyclic heteroaromatic groups and thus are clearly homologous with regard to search of prior art, since the functional groups of A exhibit similar IC50 values and since the values of R2 have similar IC50 values. This is not found persuasive because the withdrawn compounds which are withdrawn from consideration as being for non elected subject matter differ materially in structure and composition from the compounds of the elected invention. The withdrawn compounds differ from those of the elected invention such as by thienyl, thiazolyl, pyrimidinyl, pyrazinyl, pyridazinyl, etc. which are chemically recognized to differ in structure and function. This recognized chemical diversity of the functional groups can be seen by the various classification of these functional groups in the U.S. classification system, i.e. class 549 subclass 29(+) (thienyl), class 548 subclass 146(+) (thiazolyl), class 544 subclass 242(+) (pyrimidinyl), class 544 subclass 336(+) (pyrazinyl), class 544 subclass 224(+) (pyridazinyl), etc. Therefore, again, the compounds which are withdrawn from

Art Unit: 1626

consideration as being for non elected subject matter differ materially in structure and composition and have been restricted properly as a reference which anticipated but the elected subject matter would not even render obvious the non-elected subject matter. These withdrawn compounds are independent and distinct from the elected invention and do not have unity with the species elected and are therefore withdrawn by means of a restriction requirement within the claims. Applicants' claims involve more than one independent or distinct invention. Under 35 U.S.C. 121, the claims may be restricted and the examination limited to a restricted invention. The withdrawn subject matter of claims 14 and 6-9 is properly restricted as it differs materially in structure and element from the elected subject matter identified supra so as to be patentably distinct there from. A reference, which anticipated but the elected subject matter would not even render obvious the non-elected subject matter. Accordingly, restriction, as has been required is proper.

Therefore, as stated in the previous office action, the election of compound 4, results in the following generic concept: The product of the formula (I) wherein:

- (i) m denotes the number 0,
n denotes the number 1,
A denotes an (unsubstituted) straight-chain C1-3 alkylene group,
R1 denotes a pyrrolidinocarbonyl
R2 denotes a hydrogen or an (unsubstituted) C1-3 alkyl group,
R3 denotes a hydrogen or a C1-3 alkyl group,
R4 denotes a hydrogen or an (unsubstituted) C1-3 alkyl group,

Ar denotes a phenyl group substituted by the groups R5, R6 and R7,

R5 denotes an (unsubstituted) amidino group,

R6 denotes hydroxy group and

R7 denotes a hydrogen or C1-3 alkyl group.

The remaining subject matter of claims 1-4, 6-8 that is not drawn to the elected invention identified supra and claim 9 stand withdrawn from consideration as being drawn to a non-elected invention, 37 CFR 1.142 (b).

The requirement is still deemed proper and is therefore made FINAL.

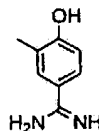
Response to arguments and amendments

Applicant's amendment to the claims filed 25 February 2004 has not deleted all of the non-elected subject matter from the claims and therefore has not overcome the objection to the claims as containing non-elected subject matter.

Applicant's arguments filed 25 February 2004 have been fully considered but they are not persuasive. Applicant argues that the subject matter of the present invention is in no way obvious in view of example 24 of WO 00/71512, neither alone nor in combination with other embodiments disclosed in WO 00/71512. Applicant argues that the example 24 has the amine function as -NH-CO- and the phenylene group is unsubstituted, whereas the instant invention is -CO-NH- and the phenylene groups are substituted. This argument is not found persuasive since the claims have been rejected over the entire reference as a whole. The prior art reference generically encompasses that which is instantly claimed and provides preferences towards the compounds as instantly claimed, specifically wherein E can be -C(=O)-N(-H)- . In regards to the

Art Unit: 1626

phenylend groups of the prior art reference, the phenylene groups can be substituted as



can be seen by the prior art preference towards Z-L as and it is noted that applicants instant elected invention has the phenylene substituted with R2 and R3 which can both be hydrogen.

Maintained Claim Objections

Claims 1-4, 6-8 are objected to as containing non-elected subject matter.

Maintained Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

Art Unit: 1626

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/71512.

Applicants instant elected invention in claims 1-4 and 6-8 teach the compound of the formula (I) wherein

- (i) m denotes the number 0,
n denotes the number 1,
A denotes an (unsubstituted) straight-chain C1-3 alkylene group,
R1 denotes a pyrrolidinocarbonyl
R2 denotes a hydrogen or an (unsubstituted) C1-3 alkyl group,
R3 denotes a hydrogen or a C1-3 alkyl group,
R4 denotes a hydrogen or an (unsubstituted) C1-3 alkyl group,
Ar denotes a phenyl group substituted by the groups R5, R6 and R7,
R5 denotes an (unsubstituted) amidino group,
R6 denotes hydroxy group and
R7 denotes a hydrogen or C1-3 alkyl group. (claims 1, 2),

wherein R1 is bound in the 4 position to the phenyl group contained in the formula, A denotes a methylene group and R5 is bound in the 3 position if R6 denotes a hydrogen

Art Unit: 1626

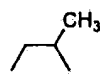
on the phenyl group for Ar (claim 3), wherein R1 is bound in the 4th position of the phenyl group, R2 is bound in the 3 position if R 3 is a C1-3-alkyl group in the 5 position (claim 4) and the specific compounds as found in claim 6, for example



(4) N-(5-carbamimidoyl-2-hydroxy-benzyl)-3-methyl-4-(pyrrolidin-1-yl-carbonyl)-benzamide,

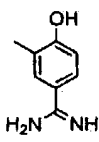
Claim 7 teaches physiologically acceptable salt of the compound of formula (I) and claim 8 teaches a pharmaceutical composition of the compound of formula (I).

Determining the scope and contents of the prior art

The prior art WO 00/71512 discloses compounds of the formula A-Y-D-E-G-J-Z-L (pages 4) which are useful for the treatment of disease states (page 10) characterized by undesired thrombosis. Page 16 of the prior art discloses a preferred embodiment for the compound of formula A-Y-D-E-G-J-Z-L wherein G is selected from -CR7R8 and -CR7aR8a-CbR8b (page 18). A further preferred embodiment found on page 26

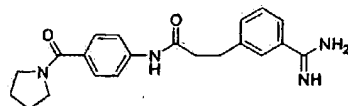
discloses the compound of formula A-Y-D-E-G-J-Z-L wherein G can be  (page 29). A further preferred embodiment of the compound of formula A-Y-D-E-G-J-Z-L is

found on page 31 wherein A can be , Y can be -C(=O)-, D can be ,


E can be -C(=O)-N(-H)-, J is a direct link (page 32), and Z-L can be  . Page 94 of the prior art reference discloses the compound of example 24:

Art Unit: 1626

Example 24. Preparation of N-[4-(1-pyrrolidinylcarbonyl)phenyl]-3-(3-amidinophenyl)-propionamide.



which has a value for A

corresponding to , a value for Y corresponding to $-\text{C}(=\text{O})-$, a value for D

corresponding to , a value for G corresponding to $-\text{CH}_2-\text{CH}_2-$, a value for J

corresponding to a direct link. This species example disclose further preferences

towards these specific values. Pages 14 and 15 of the prior art discloses

pharmaceutically acceptable salts of the compounds of the formula A-Y-D-E-G-J-Z-L

such as acid addition salts and base addition salts. Pages 53 and 54 disclose

pharmaceutical compositions comprising the compound of the formula A-Y-D-E-G-J-Z-L

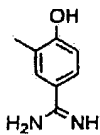
and provides specific acceptable carriers, excipients and stabilizers and a preferred

dosage.

Ascertaining the differences between the prior art and the claims at issue

The difference between the prior art and the instant elected invention is that the prior art does not disclose a specific species example which falls within applicants instant elected invention. The prior arts example 24 differs from the instantly elected invention in the value for E and the value for Z-L, but there are other preferred embodiments of the prior art invention which have the value for E as $-\text{C}(=\text{O})-\text{N}(\text{H})-$,

Art Unit: 1626



and the value for Z-L as Nc1ccc(O)cc1N as discussed above. Also, the prior art does generically disclose the compound of A-Y-D-E-G-J-Z-L which encompasses applicants instant invention and provides ample direction and guidance in the form of preferred embodiments as to the preferred substituents for A, Y, D, E, G, J, Z and L.

Resolving the level of ordinary skill in the pertinent art and considering objective evidence present in the application indicating obviousness or nonobviousness

Minus a showing of unobvious results, it would have been obvious to one of ordinary skill in the art at the time of the invention to create compounds which fall within applicants elected invention in order to prepare more compounds as found in the prior art of WO 00/71512 for antithrombotic treatment. The motivation is found in the prior art of WO 00/71512 which provides ample direction and guidance in the form of preferred embodiments and specific examples, and therefore, provides the motivation to prepare the compounds of applicants instant elected invention since these are the preferred compounds of WO 00/71512. The motivation is to prepare more compounds which are useful for antithrombotic treatment.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 1626

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rebecca L. Anderson whose telephone number is (571) 272-0696. Mrs. Anderson can normally be reached Monday through Friday 5:30AM to 2:00PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Joseph McKane, can be reached at (571-272-0699.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone numbers are (703) 308-1235 and (703) 308-0196.

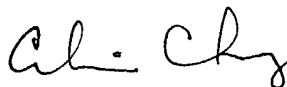
A facsimile center has been established. The hours of operation are Monday through Friday, 8:45AM to 4:45PM. The telecopier number for accessing the facsimile machine is (703) 872-9306


Art Unit: 1626

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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